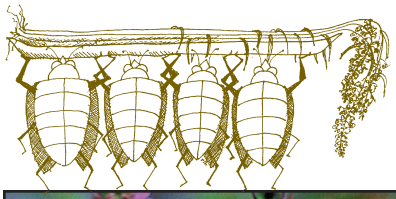


# ACTIVITY 9 GRADES 6-12

## *Galerucella* PREDATION*

### Objective
Students will introduce various organisms into a controlled environment to determine potential *Galerucella* predators.

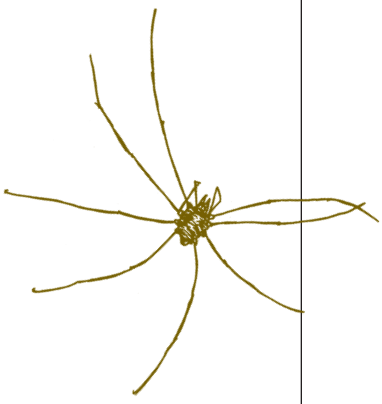
### Time Suggestion
One-eight weeks.

### Wisconsin Model Environmental Education and Science Standards
**Environmental Education:** A.8.1, A.8.2, A.8.3, A.8.4, A.8.5, B.8.8, C.8.2, A.12.1, A.12.2, A.12.4, B.12.4, B.12.6.

**Science:** A.8.1, A.8.6, B.8.3, C.8.1, C.8.2, C.8.3, C.8.5, C.8.6, C.8.11, F.8.6, F.8.8, G.8.5, A.12.3, A.12.7, B.12.4: A.8.1, A.8.6, B.8.3, C.8.1, C.8.2, C.8.3, C.8.5, C.8.6, C.8.11, F.8.6, F.8.8, G.8.5, A.12.3, A.12.7, B.12.4, C.12.1, C.12.3, F.12.7, F.12.8, G.12.2.

### DESCRIPTION
Students conduct experiments to determine predators of, and predation rates on, *Galerucella* beetles.

### PROBLEM
What are some of the predators that might affect the survival rate of *Galerucella* beetles.



### MATERIALS
- ☐ Gallon jars or 2-liter bottles of soil.
- ☐ Purple loosestrife plant stems with leaves.
- ☐ *Galerucella* beetles.*
- ☐ Various potential *Galerucella* predators.
- ☐ Small, clear plastic containers with lids.
- ☐ Cheese cloth or netting.
- ☐ Magnifying glasses.

### PREPARATION
Scout a site near your classroom where your class will be able to catch potential predators of *Galerucella* beetles.

### PROCEDURES
1. List potential predators of *Galerucella* beetles. Choose 5-10 predators to be collected to use in this experiment.
2. Have students set up *Galerucella* beetle habitat bottles according to the diagram.
3. Work with students to design a data table for recording observations over the planned duration of the experiment.
4. Maintain one habitat bottle with only *Galerucella* beetles as a control. Establish one habitat bottle for each chosen potential predator, putting one predator into each jar with the *Galerucella* beetles.
5. Maintain each habitat by adding fresh purple loosestrife as needed (leave old stalks in the habitat), filling the water in the canister, or replacing the predator if it perishes.
6. Have students observe each habitat bottle on a regular basis for 1-8 weeks. Record observations.

D. WILDE

## BACKGROUND INFORMATION

*Galerucella* beetles are plant predators (herbivores). They do not eat other animals, but there are many animals that might eat the *Galerucella* beetles. Not all of the potential predators of *Galerucella* beetles in North America are known. Biologists and resource managers need to know how these beetles will interact with other animals, especially within our wetlands, in order to predict what will happen in areas where the beetles are released. Knowing potential beetle predators can also help keep the beetles safe as they are being reared for release. *Galerucella* beetle predators may include other invertebrates (including other insects), fishes, amphibians, reptiles, birds, and mammals.

## STUDENT ASSESSMENT

Have students write a lab report including the problem, hypothesis, experimental design, observations, and conclusions.

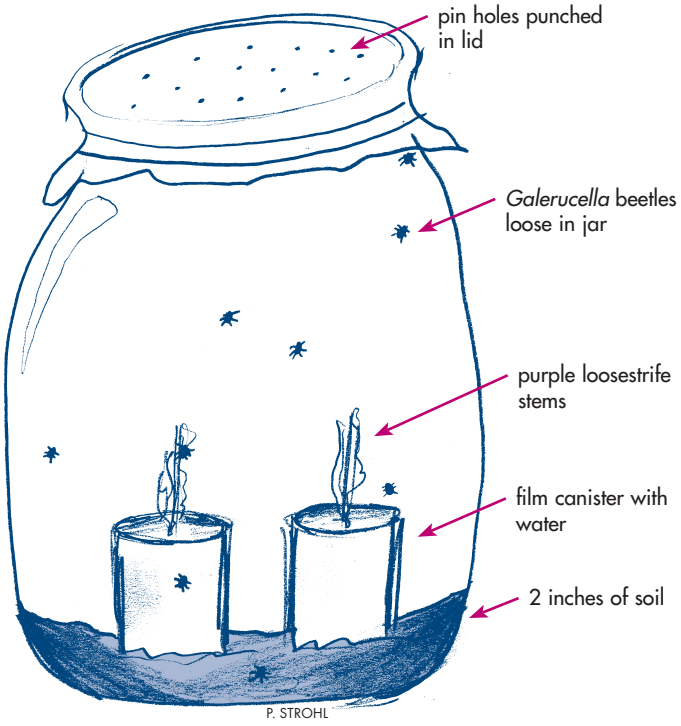
## EXTENSIONS

Repeat the experiment using only aquatic predators, other invertebrates, or abiotic agents (chemicals or environmental conditions).

Visit a wetland and observe predator/prey relationships on purple loosestrife at a beetle release site.

Send names and/or photos of all successful loosestrife predators to the Wisconsin Purple Loosestrife Biocontrol Program: **brock.woods@wisconsin.gov**.

*Get free *Galerucella* control beetles from the Wisconsin Purple Loosestrife Biocontrol Program (608-266-2554) or field-collect them in late spring or mid summer. Beetles may be acquired from the program in fall by special arrangement.




* Based on an activity developed by Catherine Werts.